AMENDMENTS TO THE CLAIMS:

This listing of the claims will replace all prior versions, and listings, of the claims in this application:

Listing of Claims:

1. (CURRENTLY AMENDED) A method comprising:

specifying, as a candidate node, a node present within a communication zone of a mobile node;

calculating, for each specified candidate node, a ratio between a number of nodes present within a first region where the communication zone of the mobile node and a communication zone of the candidate node overlap each other, and a ~~the~~ number of nodes present within a second region defined by the communication zone of the candidate node which does not overlap the communication zone of the mobile node; and

estimating ~~the~~ a distance between the mobile node and the each specified candidate node ~~distance~~ on the basis of the ratio, the distance being a function of the ratio such that the larger the ratio the larger the distance.

2. (PREVIOUSLY PRESENTED) The method according to claim 1, wherein the mobile node further selects a node for next communication, on the basis of the estimated distance.

3. (CURRENTLY AMENDED) A method comprising:

specifying a node present within a communication zone of a mobile node;

specifying a designated node out of neighbor nodes;

specifying a next neighbor node present within a communication zone of the designated node;

counting a common node number as the number of nodes common to the neighbor node and the next neighbor node;

counting a non-common node number resulting from a subtraction of the common node number from a ~~the~~ total node number of nodes of the neighbor node and the next neighbor node; and

estimating a distance between the mobile node and the designated node, on the basis of a ratio between the common node number and the non-common node number, the distance being a function of the ratio such that the larger the ratio the larger the distance.

4. (CURRENTLY AMENDED) The method according to claim 3, wherein the mobile node further selects a node for next communication, on the basis of an ~~the~~ estimated distance.

5. (PREVIOUSLY PRESENTED) The method according to claim 1, wherein the number of nodes is modified by the following equation to be counted when nodes are unevenly distributed in the first region:

$$N - \sum_{j=1}^{M} (S_j - 3)$$

where N is the total number of nodes being in the first region; S_j is the number of nodes included in a complete graph when the number of complete graphs each including four or more nodes is M; and j = 1, 2, …, M.

6. (PREVIOUSLY PRESENTED) The method according to claim 1, wherein the number of nodes is modified by the following equation to be counted when nodes are unevenly distributed in the first region:

$$N - \sum_{j=1}^{M} (S_j - 3) + \sum_{\substack{j,k=1 \\ j \neq k}}^{M} O_{jk}$$

where N is the total number of nodes being in the first region; S_j is the number of nodes included in a complete graph when the number of complete graphs each including four or more nodes is M; Q_{jk} is a modification item when the number of nodes present within the region where two complete graphs G_j and G_k are overlapping is N_{jk}, $O_{jk} = 0$ when $N_{jk} = 0$, and $O_{jk} = N_{jk} - 1$ when $N_{jk} \neq 0$; and j, k = 1, 2, …, M.

7. (PREVIOUSLY PRESENTED) The method according to claim 1, wherein the number of nodes is modified by the following equation to be counted when nodes are unevenly distributed in the first region:

$$N - \sum_{j=1}^{M} (S_j - 3) + \sum_{\substack{j,k=1 \\ j \neq k}}^{M} (O_{jk} - M_{jk})$$

where N is the total number of nodes being in the first region; S_j, S_k is the number of nodes included in a complete graph when the number of complete graphs each including four or more nodes is M; Q_{jk} is a modification item when the number of nodes present within the region where two complete graphs G_j and G_k are overlapping is N_{jk}, $O_{jk} = 0$ when $N_{jk} = 0$, and $O_{jk} = N_{jk} - 1$ when $N_{jk} \neq 0$; M_{jk} is an amendment item, $M_{jk} = 1$ when $S_j - N_{jk} = 1$ or $S_k - N_{jk} = 1$, and $M_{jk} = 0$ when $S_j - N_{jk} \neq 1$ and $S_k - N_{jk} \neq 1$; and j, k = 1, 2, …, M.

8. (PREVIOUSLY PRESENTED) The method according to claim 1, wherein neighbor node lists are compared with each other in relation to all nodes present within each region; even a plurality of nodes are counted as one if the plurality of nodes have the same neighbor node list; and the number thus counted is used as the modified number of nodes of the region.

9. (PREVIOUSLY PRESENTED) The method according to claim 1, wherein the mobile node specifies a candidate node, calculates a ratio, and estimates the distance at predetermined periods.

10. (PREVIOUSLY PRESENTED) The method according to claim 3, wherein the mobile node counts a common node number, counts a non-common node number, and estimates a distance between the mobile node and the designated node at predetermined periods.

11. (PREVIOUSLY PRESENTED) The method according to claim 9, wherein the predetermined period is changed in accordance with a movement speed of the mobile node.

12. (PREVIOUSLY PRESENTED) The method according to claim 9, wherein the predetermined period is changed in accordance with an arrangement density of the plurality of nodes.

13. (CURRENTLY AMENDED) An apparatus comprising:

a controller configurable to specify, as a candidate node, a node present within a communication zone of a mobile node, and, for each specified candidate node, to determine a ratio between a number of nodes present within a first region where the communication zone of the mobile node and a communication zone of the candidate node overlap each other, and a ~~the~~ number of nodes present within a second region defined by a portion of the communication zone of the specified candidate node which does not overlap the communication zone of the mobile node; and estimating a distance between ~~the distance of~~ that specified candidate node ~~from~~ and the mobile node on the basis of the ratio, the distance being a function of the ratio such that the larger the ratio the larger the distance.

14. (CURRENTLY AMENDED) The apparatus according to claim 13, wherein the controller selects a specified candidate node to communicate with on the basis of an ~~the~~ estimated distance.

15. (PREVIOUSLY PRESENTED) The apparatus according to claim 13, wherein the number of nodes is modified by the following equation to be counted when nodes are unevenly distributed in the first region:

$$N - \sum_{j=1}^{M} (S_j - 3)$$

where N is the total number of nodes being in the first region; S_j is the number of nodes included in a complete graph when the number of complete graphs each including four or more nodes is M; and j = 1, 2, …, M.

16. (PREVIOUSLY PRESENTED) The apparatus according to claim 13, wherein the number of nodes is modified by the following equation to be counted when nodes are unevenly distributed in the first region:

$$N - \sum_{j=1}^{M} (S_j - 3) + \sum_{\substack{j,k=1 \\ j \neq k}}^{M} O_{jk}$$

where N is the total number of nodes being in the first region; S_j is the number of nodes included in a complete graph when the number of complete graphs each including four or more nodes is M; Q_{jk} is a modification item when the number of nodes present within the region where two complete graphs G_j and G_k are overlapping is N_{jk}, $O_{jk} = 0$ when $N_{jk} = 0$, and $O_{jk} = N_{jk} - 1$ when $N_{jk} \neq 0$; and j, k = 1, 2, …, M.

17. (PREVIOUSLY PRESENTED) The apparatus according to claim 13, wherein the number of nodes is modified by the following equation to be counted when nodes are unevenly distributed in the first region:

$$N - \sum_{j=1}^{M} (S_j - 3) + \sum_{\substack{j,k=1 \\ j \neq k}}^{M} (O_{jk} - M_{jk})$$

where N is the total number of nodes being in the first region; S_j, S_k is the number of nodes included in a complete graph when the number of complete graphs each including four or more nodes is M; Q_{jk} is a modification item when the number of nodes present within the region where two complete graphs G_j and G_k are overlapping is N_{jk}, $O_{jk} = 0$ when $N_{jk} = 0$, and $O_{jk} = N_{jk} - 1$ when $N_{jk} \neq 0$; M_{jk} is an amendment item, $M_{jk} = 1$ when $S_j - N_{jk} = 1$ or $S_k - N_{jk} = 1$, and $M_{jk} = 0$ when $S_j - N_{jk} \neq 1$ and $S_k - N_{jk} \neq 1$; and j, k = 1, 2, …, M.

18. (PREVIOUSLY PRESENTED) The apparatus according to claim 13, wherein the controller compares neighbor node lists with each other in relation to all nodes present within each region;

such that even a plurality of nodes are counted as one if the plurality of nodes have the same neighbor node list and the number thus counted is used as the modified number of nodes of the region.

19. (PREVIOUSLY PRESENTED) The apparatus according to claim 13, wherein the controller specifies a candidate node, calculates a ratio, and estimates the distance at predetermined periods.

20. (PREVIOUSLY PRESENTED) The apparatus according to claim 19, wherein the predetermined period is changed in accordance with a movement speed of the mobile node.

21. (PREVIOUSLY PRESENTED) The apparatus according to claim 19, wherein the predetermined period is changed in accordance with an arrangement density of the plurality of nodes.

22. (CURRENTLY AMENDED) An apparatus comprising:

means for specifying, as a candidate node, a node present within a communication zone of a mobile node;

means for calculation, for each specified candidate node, a ratio between a ~~the~~ number of nodes present within a first region where the communication zone of the mobile node and a communication zone of the candidate node overlap each other, and a ~~the~~ number of nodes present within a second region defined by the communication zone of the specified candidate node which does not overlap the communication zone of the mobile node; and

means for estimating a ~~the~~ distance between the mobile node and the each specified candidate node on the basis of the ratio, the distance being a function of the ratio such that the larger the ratio the larger the distance.

23. (CURRENTLY AMENDED) The apparatus according to claim 22, wherein the mobile node further comprises means for selecting a node for next communication, on the basis of an ~~the~~ estimated distance.

24. (CURRENTLY AMENDED) An apparatus comprising:

means for specifying neighbor nodes present within a communication zone of a mobile node;

means for specifying a designated node out of the neighbor nodes;

means for specifying a next neighbor node present within a communication zone of the designated node;

means for counting a common node number as the number of nodes common to the neighbor node and the next neighbor node;

means for counting a non-common node resulted from subtracting the common node number from ~~the~~ a total node number of the neighbor node and the next neighbor node; and

means for estimating a distance between the mobile node and the designated node, on the basis of a ratio between the common node number and the non-common node number, the distance being a function of the ratio such that the larger the ratio the larger the distance.

25. (CURRENTLY AMENDED) The apparatus according to claim 24, wherein the mobile node further comprises means for selecting a node for next communication, on the basis of an ~~the~~ estimated distance.

26. (PREVIOUSLY PRESENTED) The apparatus according to claim 22, wherein the number of nodes is modified by the following equation to be counted when nodes are unevenly distributed in the first region:

$$N - \sum_{j=1}^{M} (S_j - 3)$$

where N is the total number of nodes being in the first region; S_j is the number of nodes included in a complete graph when the number of complete graphs each including four or more nodes is M; and j = 1, 2, …, M.

27. (PREVIOUSLY PRESENTED) The apparatus according to claim 22, wherein the number of nodes is modified by the following equation to be counted when nodes are unevenly distributed

in the first region:

$$N - \sum_{j=1}^{M} (S_j - 3) + \sum_{\substack{j,k=1 \\ j \neq k}}^{M} O_{jk}$$

where N is the total number of nodes being in the first region; S_j is the number of nodes included in a complete graph when the number of complete graphs each including four or more nodes is M; Q_{jk} is a modification item when the number of nodes present within the region where two complete graphs G_j and G_k are overlapping is N_{jk}, $O_{jk} = 0$ when $N_{jk} = 0$, and $O_{jk} = N_{jk} - 1$ when $N_{jk} \neq 0$; and j, k = 1, 2, …, M.

28. (PREVIOUSLY PRESENTED) The apparatus according to claim 22, wherein the number of nodes is modified by the following equation to be counted when nodes are unevenly distributed in the first region:

$$N - \sum_{j=1}^{M} (S_j - 3) + \sum_{\substack{j,k=1 \\ j \neq k}}^{M} (O_{jk} - M_{jk})$$

where N is the total number of nodes being in the first region; S_j, S_k is the number of nodes included in a complete graph when the number of complete graphs each including four or more nodes is M; Q_{jk} is a modification item when the number of nodes present within the region where two complete graphs G_j and G_k are overlapping is N_{jk}, $O_{jk} = 0$ when $N_{jk} = 0$, and $O_{jk} = N_{jk} - 1$ when $N_{jk} \neq 0$; M_{jk} is an amendment item, $M_{jk} = 1$ when $S_j - N_{jk} = 1$ or $S_k - N_{jk} = 1$, and $M_{jk} = 0$ when $S_j - N_{jk} \neq 1$ and $S_k - N_{jk} \neq 1$; and j, k = 1, 2, …, M.

29. (PREVIOUSLY PRESENTED) The apparatus according to claim 22, wherein neighbor node lists are compared with each other in relation to all nodes present within each region; even a plurality of nodes are counted as one if the plurality of nodes have the same neighbor node list; and the number thus counted is used as the modified number of nodes of the region.